

## The Aotus Project

### Using the night monkey as flagship species to eradicate the illegal trade of wildlife in the Colombian - Peruvian Amazon



In forest habitat countries, environmental legislation is precise, and sanctions for environmental crimes are explicit. However, corruption within environmental authorities makes law enforcement lax or non-existent to influential infractors. The alarming magnitude of the wildlife and timber trade in the Colombian-Peruvian borders of the Amazon river is threatening several taxa, such as the night monkeys (*Aotus* spp.), the only nocturnal primate in the neotropics. The Aotus Project makes use of these endemic and charismatic animals as flagship species for habitat conservation, and as case study to reinforce international wildlife trade regulations, as wildlife trade is recognised as a major threat to biodiversity.

#### Objectives:

- Monitor and quantify the trade of night monkeys between Colombia and Peru for the malaria research and tourism markets.
- Estimate the population densities and distribution of *Aotus* spp., and other associate wildlife species, at the Colombian-Peruvian border.
- Enforce environmental legislation in the Colombian-Peruvian border area through the implementation of a public benefit law suit (popular action) using night monkeys as flagship species, for the protection of rights of civil society, including administrative morality, ecosystems conservation and the sustainable use of natural resources.
- Provide updated information to the court, regional environmental authorities and CITES Colombia and Peru, for the enforcement of international wildlife trade regulations at the border area.
- Submit information on the population status and distribution of night monkeys in the area to the IUCN for further assessments.
- Monitor *Aotus* spp. to determine use of space and behavioural patterns.
- Seek sustainable economic alternatives that might replace the income obtained from illegal use of wildlife.
- Inform local people about the current legislation regarding wildlife trade and the consequences of the trade for the ecosystem and their livelihoods, as well as raising local awareness on animal welfare.



**The trade of night monkeys:** Night monkeys have been traded legally and illegally in the area for being used in biomedical research for more than 30 years ([Cambio, 2007](#)). Our preliminary results suggest that the illegal trade in night monkeys for the malaria research market is decimating wild populations and is drastically affecting their ecosystems. Census at 8 localities in Peru and Colombia have reported contrasting population density estimates for *Aotus* (Peru - commercial

hunting: 3,6 ind/km<sup>2</sup>; Colombia - subsistence hunting: 44 ind/km<sup>2</sup>). Furthermore, forest degradation related to the trapping methods has resulted in the deforestation of more than 65.000 adult trees for the capture of approximately 4000 monkeys for the period 2007-2008.

The animals are live-trapped by indigenous people in their own territories, and then sold to the FIDIC (Fundación Instituto de Inmunología de Colombia) biomedical laboratory, that has had legal permits since 1987 to collect 800 animals annually in Colombian territory. These permits were granted by the environmental authority (CORPOAMAZONIA; Corporation for the Sustainable Development of the Southern Amazon) without conducting population studies prior to issuing these permits. Even though these permits are only valid in Colombia, the animals were mainly trapped in Peru ([CORPOAMAZONIA, 2005](#); [PONAL and CORPOAMAZONIA, 2013](#)). There are no CITES permits from Peru authorising export of these primates to Colombia, however for the period 2007-2008, 75% of the animals were sourced from Peru ([Maldonado, 2011](#); [Maldonado et al., 2009](#)).

The minimum requirements for such laboratories, in order to adhere to the international protocols for the use of non-human primates in biomedical research ([SCHER, 2009](#)), is to experiment on their own captive-breeding colonies. However, using wild-caught monkeys is cheaper. Another issue related with the trade (whether legal or illegal) is the continuous release of night monkeys into the wild after being subjected to malaria research. A percentage of these animals are splenectomized; a surgical procedure in which the spleen is removed. After the experimentation (4 to 7 months), the animals collected in Peru, Brazil and Colombia are released in Colombian indigenous territory, with the participation of the environmental authority, in groups of 20 to 280 animals without any follow up. The ecological consequences of these releases on wild populations are unknown.

Capturing the monkeys not only puts indigenous people at high risk, as they do not have the adequate equipment to carry out such activities, but also takes advantage of their financial vulnerability, since economic alternatives for the communities are limited. The trade in *Aotus* spp. has also made indigenous people incur in several illegalities: traffic of wildlife, corruption of indigenous authorities in order to allow the trade (bribing), use of fake IDs or use of IDs from Colombian relatives (in the case of Peruvian-Brazilian traders) to sell the animals; amongst others. Since February 2010, traders and collectors of night monkeys from three Peruvian communities (Vista Alegre, Yahuma and Chinería) were actively involved in the *Aotus* Project, conducting census of wildlife and implementing a hunting ban on night monkeys.

Since 2009, we have been informing and denouncing this illegal trade to environmental authorities and how it affects indigenous cultures and their ethical behaviour; no actions were taken in order to control or supervise the trade, nor did environmental authorities sanction the irregularities present in the research permits granted to the laboratory. We were forced to take legal actions to stop this trade.

**Law enforcement:** On 15th April 2011, Dr. Angela Maldonado and the solicitor Gabriel Vanegas filed a public benefit law suit (popular action) against the FIDIC, the Colombian Ministry of Environment, CORPOAMAZONIA and the Prosecutor for Environmental and Agricultural Affairs, with a complete portfolio of evidence of the illegal trade in night monkeys and the negligence, omission and participation of sued organisations in this trade and its environmental impacts. The hard evidence provided was compiled by more than 50 appendices composed of a) legal documents regarding the permits granted to the FIDIC since 1999 and the list of animals coming in and out of the laboratory, acquired through right of information requests to the environmental authorities, b) scientific publications from the FIDIC that proved the use of unauthorized species in their research, c) interviews from Peruvian and Brazilian collectors documenting the trade and trapping methods, d) several technical concepts from Colombian universities, e) population assessments with results published in peer-reviewed journals confirming the conservation status of *Aotus* spp. in the Colombian-Peruvian border and f) denounces made by Peruvian community authorities regarding the continuous trade in night monkeys inside their territories.



In July 2012, the popular action obtained a [first instance ruling](#) in favour of the conservation of night monkeys, their ecosystems and indigenous people: the Administrative Tribunal of Cundinamarca ruled against the FIDIC, the Ministry of Environment of Colombia, and CORPOAMAZONIA. The verdict recognizes the defending entities as culpable of using an unauthorized species, exceeding the number of animals captured allowed in the permits, of not complying with their duty to ensure the protection of biodiversity and environmental integrity, and of not complying with Colombia's international commitments to the Convention on International Trade in Endangered Species of Wild Fauna and Flora – CITES, simultaneously incurring in a number of environmental, administrative and, in general, anti-juridical, irregularities and anomalies.

The court's decision was the first step in stopping the illegal trade in night monkeys as current trapping permits were revoked and the laboratory is not allowed to receive any more monkeys. The case has had wide coverage of national and international media as one of the major environmental achievements in Colombia. On top of stopping the legal and illegal trading of more than 3.000 night monkeys and the cutting down of 65.000 adult trees, the case has boosted the amendment of Colombia's environmental legislation to prohibit the use of wild caught animals in biomedical research, emphasising that animals used in biomedical research must be sourced from certificated captive breeding facilities that meet international standards. The law case pushed CITES administrative and scientific authorities to conduct a population study of *Aotus* spp. in the Southern Colombian Amazon.

From the four institutions that were sued, the FIDIC and the Ministry of Environment appealed; the case was hence transferred to the State Council of Colombia (Consejo de Estado) for the appeals to be studied. On the 26th of November 2013, the State Council of Colombia emitted a [second instance ruling](#) which adheres to the first instance ruling issued by the Administrative Court of Cundinamarca. The ruling also adds that the rights of civil society have been violated by the Ministry of Environment and CORPOAMAZONIA with regards to administrative morality. The sentence, which orders the creation of a verification committee in order to guarantee compliance to the judgment, sets out a new

challenge for Entropika as member of this committee: to ensure the implementation and fulfilment of the sentence. For example, if a new permit is granted, the FIDIC is obliged to implement a captive breeding program of the species it wants to use.

Magistrate Enrique Gil Botero protected the collective rights regarding administrative morality as well as the sustainable use of natural resources in border areas, focusing in the conservation of night monkeys. In addition, he ordered environmental authorities to regulate repopulation fees, as established by Colombian legislation. The courtroom emphasized that *“the decision is not an attempt to undermine scientific research in the country, but that, for the use and exploitation of animals by humans, it is necessary to comply with legal requirements and to ensure they are not subject to cruel and degrading treatments”*. We believe the decision to be a historic achievement for the conservation of Colombian wildlife and their ecosystems.

This victory also brought to Entropika an intimidation and persecution campaign organised by affected parties. This campaign includes calumny, incitation to hate, [misinforming the public](#) through the radio, television and national newspapers, banners in indigenous communities and municipalities of the Amazon department comparing Dr. Angela Maldonado to Adolf Hitler (the vast majority of indigenous people do not know who Hitler was) or declaring her as “not welcome in the Amazon”, the bribing of indigenous authorities to write letters against Dr. Angela Maldonado and Entropika to prohibit their access to the indigenous communities and hence stopping their research within these communities and intimidating e-mails. It is important to stress that the legal representative of the FIDIC’s lab is a [celebrity scientist](#) who [claims the discovery of a vaccine against malaria](#), and who has a huge influence on national media. However, the lack of results of his research and the unfulfilment of his promises has made him [lose the trust of the government and the Colombian scientific community](#) in recent years. A penal case (slander lawsuit) against the lab’s legal representative, his employees and involved indigenous authorities has been opened to sanction such attacks.

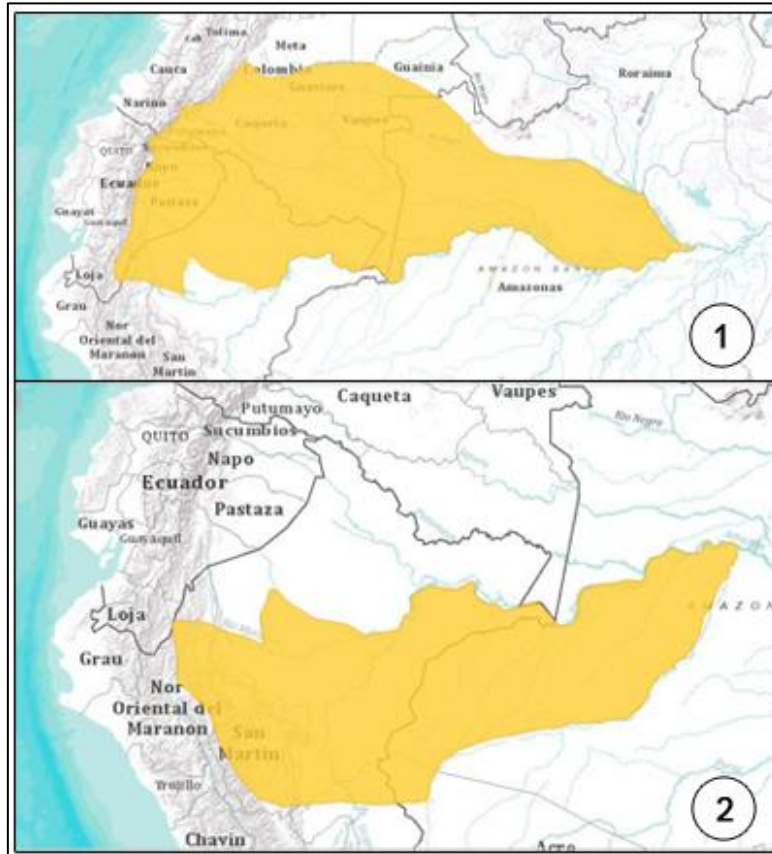
On the 8th of May 2014, the legal representative of the FIDIC sued (writ of injunction) the section of the State Council which emitted the second instance ruling that revoke their trapping permits, claiming that the sentence “violates his fundamental rights” and requesting the immediate revocation of this ruling. On the 12<sup>th</sup> of December 2014, [the Fourth Section of the State Council ruled in favour of the FIDIC](#), nullifying the second instance ruling of the Third Section of the State Council completely, seemingly without conclusive arguments. In March 2015, the State Council received the appeals of the [Third Section of the State Council](#) and of [Angela Maldonado](#), as well as the [dissenting opinion of one of the judges of the Fourth Section](#). The case was transferred to the Fifth Section of the State Council who judged the appeals to be extemporaneous after these already had been received and accepted by the Fourth Section, leaving Corpoamazonia (sanctioned by the popular action) decide whether or not the FIDIC met with the obligations under the permits granted by Corpoamazonia. Gabriel Vanegas and Angela Maldonado filed a [complaint to the Superior Judiciary Council](#) for the lack of transparency of the State Council. Corpoamazonia reported that [the FIDIC partially fulfilled its obligations and that a study on the population status of \*Aotus spp.\* is required before determining hunting quotas for malaria research](#). The case was transferred to the Constitutional Court, who’s rejected a revision request filed by the Ombudsman Office, arguing that the defence of animal rights is not a priority for this Court.



**Population studies of *Aotus* in Colombia:** In this border region, the Amazon River acts as a major biogeographical barrier to species of night monkeys. To the north of the Amazon River, Spix's night monkey (*Aotus vociferans*) can be found in Colombia, Ecuador, Peru and Brazil. Its distribution is determined by geographical barriers: to the north by the Guaviare river in Colombia, to the west by the Andean Ridge, and to the east probably by the Rio Negro in Brazil ([Aquino and Encarnacion, 1988, 1994](#); [Defler, 2010](#); [Groves, 2005](#); [Hernandez-Camacho and Cooper, 1976](#)).

To the south of the Amazon River, Nancy Ma's night monkey (*A. nancymae*) extends from the Loreto department in Peru to the Jandiatuba River in Brazil, reaching up to the Jutaf River head. In Peru, its northern limit is the Marañon River, reaching the enclave between the Tigre and Pastaza Rivers ([Aquino and Encarnacion, 1994](#); [Groves, 2005](#)).

Both species, *A. nancymae* and *A. vociferans*, are considered as least concern by the International Union for Conservation of Nature (IUCN), partly due to their wide distribution. Although the IUCN does not suggest major threats to these species, actual field data are lacking as there are few studies, particularly in areas where human pressures are increasing, such as in the Colombian-Peruvian border. Recently the IUCN recommended monitoring of extraction, legal and illegal, for both *A. vociferans* and *A. nancymae* with the aim of understanding effects on wild population levels ([Cornejo and Palacios, 2008](#)).



**Map 1.** Historic distribution of *Aotus vociferans* (1) and *Aotus nancymae* (2) (IUCN, 2013).

Although only the presence of *A. vociferans* has been registered in Colombia to the north of the Amazon River in the early 1980s both *A. nancymae* and *A. nigriceps* were observed in the FIDIC's laboratory ([Defler, 2004](#), [2010](#)). Since 1987, the Colombian environmental authorities have granted permits to this medical research laboratory in the Amazon to collect wild night monkeys, specifically *A. vociferans*, for malaria research. After being subjected to research procedures for up to 7 months, night monkeys are released back into the wild.

In previous papers we reported that from 2007 to 2008 more than 2,500 animals were sold to the facility by Peruvian trappers although they have a legal limit of 800 annually and there are no CITES permits for the export of *Aotus* from Peru to Colombia ([Maldonado et al., 2009](#)). The international trade of *A. nancymae* reported by the UNEP-WCMC database provides figures for the period 1994–2011. It shows that Peru exported 3.258 animals. Of these, the US imported 86% with 61% of the total export transactions classified as “S” (Scientific). However, biomedical research (M) is not reported, neither was Colombia listed as an importer country ([UNEP/WCMC, 2013](#)). Information regarding the effect of the illegal trade on wild populations of *Aotus* was reported by [Maldonado \(2011\)](#), while [Ruiz-Garcia \(2009\)](#)<sup>1</sup> presented genetic evidence of the presence of *A. nancymae* at the FIDIC facility in Leticia.

**Impact of post-experimental release in Colombian territory:** On top of liberating non-native species of *Aotus* in Colombian territory, the releases of night monkeys carried out by the FIDIC together with CORPOAMAZONIA do not comply with the IUCN guidelines for the re-introduction of non-human primates ([Baker, 2002](#)) as: i) the release sites had not been assessed and, in most of the cases, sites are not considered suitable habitats owing to their proximity to human settlements, ii) the release-stock was subject to 4-7 months of malaria experimentation and received neither adequate veterinary screening (including genetic status identification) nor a rehabilitation process, iii) animals had been released in numbers that range from 20 to 278 individuals ([CORPOAMAZONIA, 2008](#)<sup>2</sup>, [2012](#)<sup>3</sup>), while average group size is of 3-5 individuals, iv) post-release requirements are not fulfilled as animals are released without monitoring or any follow-up. The ecological consequences of these releases on wild populations are unknown.

Local people reported the presence of carcasses of night monkeys close to their crops and described that the animals have a tattooed number on their legs, which corresponds to the code given by the laboratory for experimentation. The [BUAV investigation of 2012](#) in Los Lagos, Colombia, documented the trapping of one night monkey marked with a tattoo that was immediately released by the local collectors as the FIDIC do not pay collectors for already-marked animals. While collecting GPS waypoints in private lands in Colombia, where *A. nancymae* had been released by CORPOAMAZONIA, we found several animals of this phenotype, confirming the survival of this species in Colombia. However, although released animals can survive, it is almost impossible to determine survival rates owing to the lack of follow-up.

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<sup>1</sup> Ruiz-García, M. 2009. Informe técnico final del análisis de la composición genética de la colección de *Aotus* de la FIDIC solicitada por CORPOAMAZONIA. Bogotá, D.C. 22 p.

<sup>2</sup> CORPOAMAZONIA. 2008. Acta de liberación de monos *Aotus* sp. Fecha de liberación 16 de febrero de 2008. Leticia, Amazonas: CORPOAMAZONIA. p 2.

<sup>3</sup> CORPOAMAZONIA. 2012. A-DTA 001. Actas de seguimiento al proceso de liberación y reintroducción al medio natural de ejemplares de *Aotus* de la Estación Experimental FIDIC (21 y 23 de enero, 29 de febrero, 1 y 3 de marzo, 18 de mayo 2012). Leticia, Amazonas: CORPOAMAZONIA, Dirección Territorial Amazonas. p 27.

***Aotus nancymae* in Colombia:** Assuming that *A. nancymae* trapped in Peru and Brazil were liberated at any of the Colombian release sites over the last three decades, the map resulting from the GPS waypoints obtained from the official releases ([CORPOAMAZONIA, 2012<sup>3</sup>](#)) and from our field work suggests that *A. nancymae* is present in Colombia. It is distributed along the Amazon River with a broader distribution in the area between San Juan de Atacuarí and San Juan de Socó, at the western limit with Peru (see Map 2; [Maldonado and Peck, 2014](#)). As territorial species living in groups of no more than five individuals, there are likely impacts on competition for food, territory, behaviour and of course health. [Maldonado \(2013\)](#) and [Ruiz-Garcia et al. \(2013\)](#) also suggested that the releases of *A. nancymae* in Colombia for more than three decades, not only created an introduced population of *A. nancymae*, but also might have displaced wild populations of *A. vociferans* at the release sites.

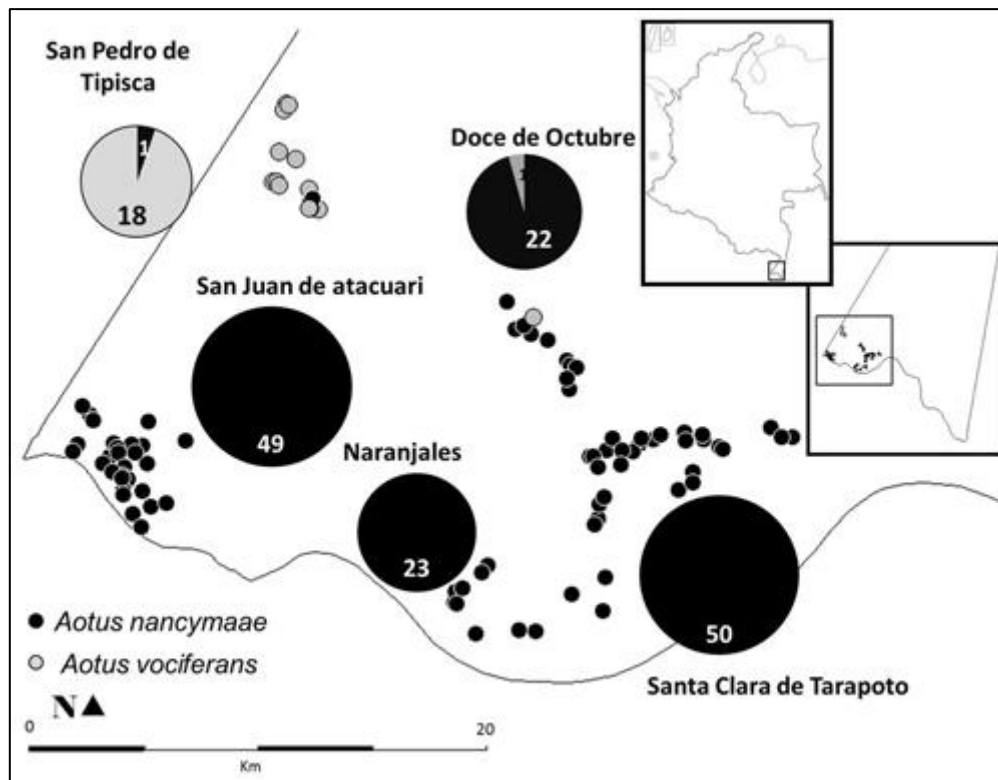


**Map 2.** Historic distribution and predicted distribution of *Aotus nancymae* following capture in Peru and post-experimental release in Colombia ([Maldonado and Peck, 2014](#)).

The first result of the public benefit law suit (popular action) presented during the conciliation was the implementation of an agreement between CORPOAMAZONIA (regional environmental authority), the Ministry of Environment (CITES administrative authority), the Research Institute for the Colombian Amazon - SINCHI - and the Colombian National University - UNAL - (CITES scientific authorities) to conduct a pilot project to gather baseline information about the genetics and ecology of *Aotus* spp. where the FIDIC had been trapping and releasing animals.

The preliminary results from the UNAL/SINCHI study presented on 4th July 2014 confirms the presence of *A. nancymae* in Colombian territory, but only found *A. vociferans* at the control site (San Pedro de Tipisca), confirming our hypothesis that this species might be displaced by *A. nancymae*. The study proposes a distribution map for *A. nancymae* in Colombia (see Map 3; [IGUN, 2012](#))

which coincides with the findings of [Maldonado and Peck \(2014\)](#). The results also suggest the existence of a historical distribution of *A. nancymae* north of the Amazon River in Colombian territory, as well as of another population of *A. nancymae*, not of historical lineage but probably introduced in Colombia in more recent times. The [IGUN report \(2012\)](#) states that "in spite of the identification of unique haplotypes (collections of specific DNA sequences) in the FIDIC, the association between haplogroups (collection of haplotypes sharing a common ancestor) found in the FIDIC and in the field does not totally exclude Colombia as the source of the individuals used by the FIDIC". It is important to note however that the main limitations of this study are the short fieldwork period and the reduced number of sampling sites.



**Map 3.** Taken from the IGUN (2012) report. Distribution and frequency of *A. vociferans* and *A. nancymae* at five localities sampled in the Colombian Amazonian trapezium. The circles show the proportion of each species found at each locality.

Furthermore, the study reports that from 169 animals collected in five localities, 19 animals were released by the FIDIC as they were marked with their tattoo number. They compared body weight of the FIDIC's animals when they arrived at the laboratory, before and after the release, and recommend that, owing to the significant differences in weight (very low weight after releases), the release plan should be adjusted to improve the physical conditions and survival rate of the animals. Another recommendation done by this study is to forbid the captures and releases of monkeys in the western part of the Colombian Amazon (between the western frontier and Naranjales) as long as the origin and distribution of the historical population of *A. nancymae* is not determined.

**Recommendations for the conservation of *Aotus* spp.:** [Maldonado and Peck \(2014\)](#) strongly recommend a long-term study in the trapping/release sites in order to determine the status of *A. vociferans* to allow environmental authorities to implement a management plan for this species as it



appears to be locally extinct. If the populations of *A. nancymae* in Colombian territory, identified by the UNAL/SINCHI study, are considered to be naturally distributed in Colombia, its distribution area is extremely restricted and would be composed of a very small population. Therefore, it is suggested that this species should be included in one of the Endangered (EN) categories for Colombia, according to the criteria of the IUCN, and Appendix I of CITES. In addition, we recommend that Peru completes non-detriment finding reports to prove that international trade is not harming resident populations of regulated species ([CITES, 1992](#)).

It is also critical that the UNAL and SINCHI continue with the phases II and III of their project to compare their genetic results with animals from Peru and Brazil. This will improve our understanding about the population dynamics of the genus *Aotus* regarding their evolutionary patterns at the Brazil-Colombia-Peru tri-border area, and will also clarify the origin of the two populations of *A. nancymae* found in Colombia, which might correspond to an endemic population (western limit with Peru in the Atacuarí region) and an introduced population owing to the continuous releases of the FIDIC.



**Campaign against the trade of wildlife at the Colombian – Peruvian border:** Our results have been widely distributed by national and international media, putting pressure on the environmental authorities who have neglected the magnitude of the illegal trade for over 33 years. Dr. Angela Maldonado won in 2010 the Whitley Gold Award (UK) for her outstanding contribution to species and habitat conservation in the Colombian - Peruvian Amazonian frontier. Furthermore, she was

nominated as one of the 15 most important people in Colombia in 2010 by the newspaper [El Espectador](#), and as one of the 100 most influential people from the Colombian society in 2010 by the [Gerente Magazine](#). These nominations were based on her conservation work in the Amazon, her efforts to communicate effectively to a broad, national and international audience about the consequences of over-exploiting natural resource and for denouncing the corruption and negligence of environmental authorities in Colombia.

Since January 2011, the Aotus Project, Fundación Entropika and the Colombian Primatological Society, with the financial support of The Whitley Fund for Nature, The Rufford Small Grants, Rainforest Concern, WWF - EFN, The International Primate Protection League, The British Union for the Abolition of Vivisection, The Kilverstone Charitable Trust, and The American Society of Primatologists, embarked on this campaign using night monkeys as flagship species. Up to date we have received the attention of the presidency of Colombia (Office of Environment, Biodiversity, Water and Climate Change), the European Commission, the International Primatological Society, the European Federation for Primatology and regional authorities such as the Fiscal Control of the Amazonas Department (Contraloría Departamental Amazonas).

Click below to see some of the documents used in the campaign:

Legal actions: [Sentence Consejo de Estado, 23rd November 2013](#)

[Sentence Consejo de Estado \(short\), 23rd November 2013](#)  
[Sentence Administrative Court of Cundinamarca, 6th July 2012](#)  
[Sentence Administrative Court of Cundinamarca \(short\), 6th July 2012](#)  
[Sentence Administrative Court of Cundinamarca \(short, English\), 6th July 2012](#)  
[La República judicial notice, 26th May 2011](#)  
[Acceptance of the public interest suit, 25th April 2011](#)

Media:

[W Radio interview, 4th February 2015](#)  
[Nocturna RCN interview, 14th May 2014](#)  
[AnimaNaturalis campaign, 1st May 2014](#)  
[Radio Fantástica interview, 30th April 2013](#)  
[BUAV investigation, 21st August 2012](#)  
[Noticias RCN interview, 31st July 2012](#)  
[Noticias RCN interview, 6th July 2012](#)  
[Day of the Environment 2012 pictures, 5th June 2012](#)  
[Leaflets on the illegal trade of Aotus](#)  
[Banners against the trade](#)  
[IPPL \(US\) campaign](#)  
[Caracol TV video, 23rd November 2010](#)  
[Planeta Caracol Radio interview, 13th July 2010](#)  
[Whitley Awards 2010 pictures, 12th May 2010](#)  
[Whitley Awards 2010 video, 10th May 2010](#)

Popular articles:

[Radio Macondo article, 26th June 2015](#)  
[MiPutumayo article, 24th June 2015](#)  
[El Espectador article, 7th February 2015](#)  
[Semana article, 4th February 2015](#)  
[SciDev.Net article, 7th August 2014](#)  
[La Silla Vacía article, 1st August 2014](#)  
[La Silla Vacía article \(long version\), 1st August 2014](#)  
[Yale Environment 360 article, 21st July 2014](#)  
[AnimaNaturalis article, 25th June 2014](#)  
[PrensAnimalista article, 11th June 2014](#)  
[El Tiempo article, 28th May 2014](#)  
[El Espectador article, 12th May 2014](#)  
[Perspectiva article, 12th May 2014](#)  
[El Espectador article, 7th May 2014](#)  
[El Espectador article, 6th February 2014](#)  
[Vanguardia article, 4th December 2013](#)  
[Semana article, 29th November 2013](#)  
[Kien&Ke article, 29th November 2013](#)  
[El Espectador article, 29th November 2013](#)  
[La Silla Vacía article, 22nd July 2012](#)  
[Semana article, 15th July 2012](#)  
[Kien&Ke article, 12th July 2012](#)  
[El Espectador article, 6th July 2012](#)  
[El Espectador article, 5th July 2012](#)  
[El Tiempo article, 5th July 2012](#)  
[Semana article, 5th July 2012](#)

[El Colombiano article, 5th July 2012](#)  
[El Espectador article #2, 4th July 2012](#)  
[El Espectador article, 4th July 2012](#)  
[El Tiempo article, 4th July 2012](#)  
[La República article, 4th July 2012](#)  
[Correo Confidencial article, 4th July 2012](#)  
[El Comercio article, 21st August 2011](#)  
[Kien&Ke article, 12th July 2011](#)  
[Cañamo article, 21st June 2011](#)  
[Inter Press Service article, 5th April 2011](#)  
[El Espectador article, 11th December 2010](#)  
[Revista Gerente article, November 2010](#)  
[Los Angeles Times article, 10th July 2010](#)  
[El Tiempo article, 15th May 2010](#)  
[El Tiempo article, 13th May 2010](#)  
[The Telegraph article, 13th May 2010](#)  
[Cambio article, 22nd November 2007](#)  
[Scientific American article, December 1996](#)

Presentations: [Presentation on the role of primate conservation to fight illegal trade](#)  
[Poster on the illegal trade of Aotus](#)  
[Poster on the process of lyophilisation](#)  
[Presentation on the Conservation biology of Aotus](#)  
[Presentation on the Illegal trade of Aotus](#)

**Sustainable economic alternatives for local people:** This is done in an attempt to reduce pressure on natural resources by providing alternative income to vulnerable groups and, as such, replacing their current revenue of the illegal trade of wildlife. One of these initiatives is the freeze-drying of fruits surplus (for example, [lyophilisation of “Ají maicito”](#), a chilli from the Amazon). We are currently conducting a market study to determine the viability of this initiative.



The freeze-dried chilli resulting from the preliminary study is currently being [sold in the Wingham Wildlife Park \(UK\)](#). The Aotus Project has also been training two Colombian communities in the elaboration of essential oils and personal care products (i.e. shampoo, soap, repellent oil) with the hope these can be sold in the future; right now, these are being used by the indigenous communities themselves. Furthermore, we are currently looking at the possibility of training indigenous communities in the making of ecological handcrafts using plastic bags and other re-usable materials.

**Entropika**

*Conservation in action*

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05<sup>th</sup> October 2015